

**REMARKS**

The Final Office Action mailed August 19, 2009, has been carefully considered. Reconsideration in view of the following remarks is respectfully requested.

**35 U.S.C. 112, Sixth Paragraph**

Claim 1 has been amended to recite, *inter alia*,

means for bringing the elements into contact with the surface of an object to be checked; and  
means for determining the positions of the multiple elements relative to the object, using the means for bringing the multiple elements into contact

In this manner, claim 1 clearly invokes 35 U.S.C. 112, sixth paragraph, in that it sets forth means plus function, without recitation of structure corresponding to said means. In particular, claim 1 now recites “means for” (means) plus “bringing the elements into contact with the surface of an object to be checked” (function); and “means for” (means) plus “determining the positions of the multiple elements relative to the object, using the means for bringing the multiple elements into contact” (function).

**Rejection(s) Under 35 U.S.C. § 102**

Claims 1-6 and 12-14 stand rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Bolomey et al. (U.S. pat. no. 6,424,597; hereinafter, “Bolomey”). Applicants respectfully traverse.

As previously explained, Bolomey falls in the category of the prior art discussed in the background section of the specification, wherein it is explained that one shortcoming of the Bolomey arrangement is that it is not possible to keep an optimum coupling between the transducers and complex parts, particularly when these transducers are displaced on the surface of such parts. In Bolomey, nothing is provided to keep the elements in contact with the object that is being checked during displacements of the transducer during the check, and to assure

coupling with the object. The fact that in the presently claimed invention the multiple elements of the transducer are rigid ultrasound emitting elements and are mechanically assembled to each other so as to form an articulated structure, leads to a simplified and improved coupling between the emitters and an increased reliability since this coupling is achieved even if one emitter adjacent another is defective. These claimed features are not disclosed or suggested by Bolomey either in the passages of col. 3, ll. 24-38, and in claims 1-3, cited in the Office Action, or in the reference as a whole, and for this reason at least, the invention of claims 1-14 is patentable over Bolomey.

The present invention solves a problem which is posed by Bolomey and which is not solved by Bolomey's mechanical system 56.

In the present application, reference numeral 36 of figure 1 corresponds to Bolomey's mechanical system 56 which is constituted of an articulated arm provide with a coder which presses on Bolomey's "global frame" or housing 14 corresponding loosely to reference numeral 12 in the present application. So, it is clear that, in the present invention, a pressing mechanical system has been added, a system which makes it possible to bring the **elements 6 of Bolomey** into contact with **irregular surfaces** during a displacement of the transducer on such surfaces.

In Bolomey, the goal of the mechanical system 56 is to hold and position the transducer with respect to the reference frame of the object to be checked. Thus, **only the housing is pressed on the object ; Bolomey's elements 6 are not pressed thereon.**

Therefore, in Bolomey, **nothing is provided between the elements 6 and the detectors (receivers) 18 which are fixed to the housing.** Consequently, Bolomey's element 56 is not a means for bringing elements 6 into contact with the surface of an object.

The present invention adds a device to Bolomey's transducer, namely a pressing mechanical system between the housing 14 and elements 6 (Bolomey's reference numerals – in the present application these reference numerals 14 and 6 correspond to reference numerals 12 and 2 respectively) so as to ensure the bringing of the elements into contact with irregular surfaces during the displacement of the transducer thereon. Such a function ensures an acoustic coupling and the radiance of the acoustic waves in the object to be checked.

But this function also facilitates good measurement of the positioning of the elements. This is because, in Bolomey, the surface reconstruction is carried out by means of measurements which provide the positions of "antennas" which are placed on the back of the elements, not directly on the surface of the object. It can be understood that if the elements are not properly brought into contact with the surface, that will cause surface reconstruction errors. It should be noted that the surface is used for the calculation of the delay laws for focusing acoustic energy into the object to be checked.

In conclusion, Bolomey discloses the principle of operation of a multi-elements flexible transducer whose delay laws are adapted to a surface and such an operation is limited to a "static case" in which the elements which are located in the transducer are properly positioned on the object. But Bolomey does not solve the problem of the "kinetic case" in which the transducer is displaced on an object.

The present invention solves an acoustic problem concerning energy transmission and surface reconstruction, by properly controlling the mechanical position of Bolomey's elements 6 with respect to Bolomey's housing 14. In the present invention, the double problem is solved by specific means of bringing the elements into contact with the surface.

It will be appreciated that, according to the M.P.E.P., a claim is anticipated under 35 U.S.C. § 102 only if each and every claim element is found, either expressly or inherently

described, in a single prior art reference.<sup>1</sup> The aforementioned reasons clearly indicate the contrary, and withdrawal of the 35 U.S.C. § 102 rejection based on Bolomey is respectfully urged.

### **Rejection(s) Under 35 U.S.C. § 103(a)**

Claims 7-11 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Bolomey as applied to claim 1-6 and 12-14, above, and further in view of Bjorner et al. (U.S. pat. no. 5,485,263; hereinafter, "Bjorner").

Claims 7-11 variously depend, directly or indirectly, from the base claims addressed above. Bjorner fails to remedy the above-mentioned shortcomings of Bolomey with respect to the base claims. Accordingly, claims 7-11, which by definition include all the limitations of the base claims, are patentable over the combination of these references.

### **Double Patenting Rejection**

Claims 1-2 and 13 stand rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 3 of Bomoley. Applicants respectfully traverse.

The Office Action alleges that instant claims 1-2 and 13 are unpatentable over claims 1 and 3 of Bomoley because instant claims 1-2 and 13 are broader, and it would have been obvious to broaden claims 1 and 3. Applicants respectfully submit that the desire to make claims broader is not proper motivation upon which to base a *prima facie* case of obviousness. Such an alleged basis for obviousness does not substantively address the claimed subject matter and is consistent with any articulated guidelines in case law or in the rules of patent practice relating to obviousness, and the double patent rejection based thereon should be withdrawn.

### **Conclusion**

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<sup>1</sup> Manual of Patent Examining Procedure (MPEP) § 2131. See also *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

In view of the preceding discussion, Applicants respectfully urge that the claims of the present application define patentable subject matter and should be passed to allowance.

If the Examiner believes that a telephone call would help advance prosecution of the present invention, the Examiner is kindly invited to call the undersigned attorney at the number below.

Please charge any additional required fees, including those necessary to obtain extensions of time to render timely the filing of the instant Amendment and/or Reply to Office Action, or credit any overpayment not otherwise credited, to our deposit account no. 50-3557.

Respectfully submitted,  
NIXON PEABODY LLP

Dated: December 19, 2009

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